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ABSTRACT

The results are presented of an "Alcohol Education Traffic Safety Program" for students in kindergarten through grade 6, which was piloted in 20 Chicago (Illinois) public schools during April, May and June of 1987. Research indicates that the younger children are when they begin abusing alcohol, the higher the probability that they will become hard-core alcohol abusers, thus justifying alcohol education at a very early age. The "Starting Early" program was initiated to determine its effectiveness in urban, multiracial, multicultural settings; it includes seven sets of instruction modules (one each for kindergarten through grade 6) to assist elementary school students in making "best interest" decisions about alcohol use and traffic safety. Each module contains five lessons, and to implement the program, four primary, middle, and upper grade classroom teachers were identified in each of the 20 schools. About 2,000 students (68% black) were enrolled in the 72 classrooms using "Starting Early" modules. Based on a comparison-group design, it was found that students in grades 3, 4, and 5 made significant gains in knowledge, but sixth graders did not. Student and teacher questionnaires assessed participant satisfaction with the program. Teachers believed that the program would probably (57% of teachers) or definitely (41%) have an impact on their students' behavior. Likewise, the children strongly agreed that they learned things in the program that will do them good. The program helped students build sources of support, thus strengthening their will to resist the lure of alcohol and illegal substances. Four tables present study results. (Author/SLD)

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An Evaluation of an Alcohol Education and
Traffic Safety Program for Urban Elementary School Pupils

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Abstract

This paper presents the results of an Alcohol Education and Traffic Safety Program for pupils in grades K through 6 which was piloted in 20 Chicago public schools in April, May, and June of 1987. It has been found that the younger children are when they begin abusing alcohol, the higher the probability that they will become hard-core abusers, thus justifying alcohol education at a very early age. Based on a comparison-group design, it was found that pupils in grades 3, 4, and 5 made statistically significant gains in knowledge, but pupils in grade 6 did not (K-2 pupils were not tested). Teachers believed that the program would probably (57% of teachers) or definitely (41%) have an impact on their pupils' behavior. Likewise, the children strongly agreed with the statement, "In this program I learned things that will do me some good." The evaluators concluded that the program helped students build sources of support, thus strengthening their will to resist the lure of alcohol and illegal substances.

Introduction

The objective of this paper is to present the results of an Alcohol Education and Traffic Safety Program for pupils in grades K through 6 which, with the approval of the Chicago Board of Education, was piloted in 20 representative schools throughout the Chicago Public School system during the months of April, May, and June of the 1986-87 school year. This alcohol and traffic safety awareness program was piloted to determine its effectiveness in urban, multiracial, multicultural settings. Approximately \$10,000 from a grant the Illinois State Board of Education received from the State Department of Transportation covered direct program costs which included the purchase of 100 curriculum kits, one-day pay for approximately 80 substitute teachers, sets of films used in the implementation, and honoraria for three teacher consultants.

The school system adopted alcohol education and traffic safety modules developed and tested by Teachers College, Columbia University, to assist elementary school pupils in making decisions on alcohol use and traffic safety that are in their best interests. This program, known as Starting Early, consists of seven sets of instruction modules, one for each grade level from kindergarten through grade six. The premise for the instruction is that children will be better prepared to make alcohol-related decisions if they have:

- . Knowledge of the influence of alcohol on the body and mind, and of the potentially serious consequences of alcohol abuse;
- . Encouragement to explore their attitudes about the

consumption of alcoholic beverages and related matters;
and

- . Practice in planning and acting out, ahead of time, the ways to cope with or avoid alcohol-related situations dangerous for themselves and others.

Approximately five hours were needed to teach the five lessons in each module. Each module provided objectives, content, a list of materials needed, and instruction techniques to use with children at the level for which the module was designed. Donovan (1982) reported that these modules were grounded in the lives of children, were based on teaching techniques proven effective with pupils in grades K through 6, and presented content of increasing complexity about the use and misuse of alcohol. The modules were meant to encourage teachers and pupils to keep alcohol and traffic safety concerns in the forefront.

Background

Research

What is the grade-by-grade efficacy of alcohol education and traffic safety programs? This question has been researched extensively with inconclusive results. It is widely believed, however, that a person's behavior toward alcohol is greatly affected by socialization and other influences present during childhood and adolescence (Johnston, Backman, & O'Malley, 1979). Moreover, Mayo (1987) reported that the younger children are when they begin abusing substances, the higher the probability that they will become hard-core abusers. Dawkins (1986), who investigated the reasons for alcohol use among youthful urban blacks, found that, "The ages at the start of regular drinking tended to be between 13 and 18 and a substantial number of the

heavy drinkers began drinking heavily at 15 or younger." (p. 23)

The true prevalence of alcohol and substance use and abuse among youngsters is difficult to determine because surveys often do not include dropouts and absentees, whose use and abuse of alcohol and illegal substances is presumed to be higher.

Wechsler, Rohman, Kotch, and Idelson (1984) found that 35 percent of their 623 high school subjects used alcohol at least once a week and that, during that school year, between 43 and 50 percent of these students had been passengers in automobiles driven by people under the influence of alcohol. Johnston, O'Malley, and Bachman (1985), who surveyed high school students nationwide, reported that at least 90 percent of the seniors (N = 17,700) had used alcohol, 55 percent had smoked marijuana, and 62 percent had used some illicit drug.

Clearly, these prevalence figures lead to certain questions: What factors contribute to make children so vulnerable to alcohol and substance abuse? Are alcohol and drug education efforts effective in countering the lure alcohol and illicit drugs exert on the lives of children? Researchers have identified psychosocial factors such as social, cognitive, attitudinal, personality, and developmental influences as primary contributors to the lure these substances exert on children (Botvin, 1986). Moreover, Orlandi (1986) in his review of substance abuse prevention research from a multicultural perspective reported that among Hispanics the stress of acculturation and the struggle for upward mobility were also important determinants of alcohol and substance abuse.

Education programs in the area of alcohol and traffic safety have used two distinct approaches: 1) a traditional approach that involves either factual information about the dangers of alcohol and about its effect on people and society or efforts to enhance self-esteem through 'affective' education and 2) a psychosocial approach which stresses social influences and enhances personal and social competence to help children cope with life problems. The second approach has been found to be much more effective (Botvin, 1986). However, evaluators have not investigated the efficacy of prevention programs using either of these approaches with elementary school pupils. This evaluation addresses the aforementioned questions in the context of urban pupils in grades K through 6.

Substance Abuse Prevention in
the Chicago Public Schools

Previous to the implementation of Starting Early, the Chicago Public Schools conducted a program which provided substance abuse prevention education to groups of teachers and students. The general goals of this project were to make teachers and students more knowledgeable of substances and their effects on the body and mind and to promote resistance and life skills. This project was evaluated and the results presented to the Chicago Board of Education in Intensive Staff Development for Substance Abuse Prevention: Evaluation Report - FY 1986. In general, results on a locally-developed drug education test administered to teachers and students before and after the project indicated that their knowledge of substances and their effects on the body and mind had increased. These encouraging

results served as the impetus for the implementation of Starting Early.

Implementation

The Instruction Committee of the Chicago Board of Education reviewed plans for the implementation of Starting Early on March 20, 1987, and recommended that it be presented to the full Board for approval. On March 25, 1987, the Chicago Board of Education approved the participation of 20 select Chicago public schools in this pilot project.

Organization

Each of the 20 elementary school districts in the school system was to identify one school to pilot Starting Early. Subsequently, a cadre of 4 classroom teachers was identified in each of the 20 schools, including a primary grade (k-2), middle grade (3-4), upper grade (5-6), and a fourth teacher of the building administrator's choice. The guidelines received from the Illinois State Board of Education stipulated that teachers involved in this program should volunteer and agree to receive training, implement the program in the classroom, serve as presenters to help fellow teachers make effective use of the Starting Early instruction package, and participate in the evaluation of the project.

The training of participating teachers was held the last day of April and the first day of May, 1987. Classroom implementation of this five-lesson program was framed tightly within the last five-to-seven weeks of the 1986-1987 school year. Teachers, however, were encouraged to use their own initiative regarding

the schedule and subject area (i.e., health, science, social studies, . . .) within which they would teach the five lessons.

Participants

The 20 schools, one from each elementary school district, were representative of the school system as a whole. The students of twelve of these schools were virtually 100 percent black and the students of two were 75 percent or more Hispanic. These 14 schools were classified by the school system as racially identifiable schools. The remaining six were desegregated or integrated schools. The school system defines a desegregated and/or integrated school "as one that is 30 to 70 percent white or minority" (Annual Desegregation Review 1986-87, p. ii). A distinction is made between a desegregated school, where the "levels of integration are obtained primarily by student assignment techniques" (p. ix), and an integrated school, where integration is "derived primarily from residential and natural attendance patterns" (p. x). Of these six schools, five met the criterion for desegregated schools and one was an integrated school. White students were most numerous in all six schools. In fact, four of the schools were over 50 percent white while, in the remaining two, neither whites, blacks, nor Hispanics predominated.

The first inservice meeting was attended by a total of 42 teachers and administrators from Districts 1 through 10. Among these 42 participants there were seven fourth-grade teachers; six teachers each from grades 1, 5, and 6; four teachers each from kindergarten, second, and third grade; and one special education

teacher. In addition, there were four principals at this first inservice meeting. The second inservice meeting was attended by 39 teachers and administrators from districts 11 through 20. Among these 39 participants there were six teachers each from grades 2, 3, 5, and 6 as well as four teachers that taught fourth grade, three kindergarten, two first grade, and one special education. The remaining five participants included two resource teachers, two teachers who taught split 7-8 graders, and one assistant principal. Teachers of the comparison classrooms did not attend the training sessions.

For the purpose of assessing the participants' preprogram knowledge and attitudes toward alcohol, they completed a survey which included 20 attitudinal and 10 knowledge items. The 81 participants had differing opinions on some attitudinal items (i.e., I think alcoholics themselves are mostly responsible for becoming addicted and I think that light drinking and driving is not okay), with approximately one third agreeing, one third disagreeing, and the rest being neutral. Some items (i.e., I usually prefer to gulp drinks because gulping creates a faster effect and I can excuse someone more readily for obnoxious behavior because they were drunk) elicited strong disagreement from over 80 percent of participants, while others (i.e., When I am sober, drunken behavior in others seems immature; I feel I am just as responsible for my actions when I am drunk as when I am sober; and students who are caught by the police for driving while intoxicated should be prosecuted) elicited strong agreement from at least 75 percent of teachers and administrators in attendance. An interesting fact emerged from the responses to

the 10 knowledge items. Namely, many teachers were unsure about the truthfulness or falsehood of the information in the items. On the average, the proportion of those who were unsure was .45 per item.

Approximately 2,000 students were enrolled in the 72 classrooms where Starting Early modules were taught. Hence, an average of 286 students received instruction based on the module corresponding to their grade. As expected, racial composition of the 72 classrooms matched that of the 20 schools' student populations as a whole. Thus, for instance, in the school in District 5, where Hispanics were 79 percent of the student population, the Starting Early curriculum was taught in four classrooms where 78, 83, 72, and 87 percent of the students were of Hispanic origin. Again, in the school located in district 20, where about 53 percent of all the students were white, Starting Early was taught in three classrooms where 44, 47, and 43 percent of the students were white. Approximately 68 percent of the 2,000 pupils were black, 19 percent Hispanic, and 13 percent white. Slightly under 53 percent of the pupils were girls.

As reported in Fiscal 1988 Education Consolidation and Improvement Act, Chapter 1 Application, pupils from low-income families residing in the 20 schools' attendance areas ranged from 5 to 82 percent. The Chicago Public Schools computes the percentage of low-income families using a combination of information from: a) the free and reduced lunch information, b) the number of children in families receiving Aid to Families with Dependent Children or General Assistance, and c) the 1980 United States Census. The poverty level of the students attending the

20 schools in 1987 was on the average 49 percent. However, when the 14 racially identifiable schools were looked at in isolation, the average poverty rate was 64 percent. The one desegregated and five integrated schools had an average poverty rate of 13 percent.

Materials and Instruction

To support the implementation, the Illinois State Board of Education provided a complete Starting Early kit for each participating teacher, hosted two one-day training workshops for the teachers, reimbursed the schools for the cost of substitutes, and provided four sets of nine 16 mm films each to be used in teaching the Starting Early curriculum.

That the formation of attitudes occurs at a very early age is generally supported by scholars and researchers alike. It follows that children's attitudes toward drinking and driving are shaped early and that, therefore, the use and misuse of alcohol should be probed from the child's perspective. This is what the Starting Early curriculum was designed to accomplish. The child's perspective in these materials is conveyed through teaching techniques and activities of demonstrated effectiveness with the age groups involved. The objectives and materials increase in complexity by grade, with each grade building on the objectives, activities, and content of preceding grades. The objectives helped pupils identify (a) signs of alcohol abuse; (b) ways the abuse of alcohol might affect an individual's ability to carry out personal, family, and community responsibilities; (c) alcoholism as a treatable condition; (d) community resources

available to help with drinking problems; (e) the effects of drinking on driving and pedestrian skills; (f) reasons young people have a special drinking and driving problem; and (g) ways to deal with potentially hazardous drinking and driving situations. The activities capitalized on children's real-life situations and experiences.

For the training that preceded the actual classroom instruction, representatives of the Illinois State Board of Education projected an introductory film that depicted how teachers have used the Starting Early materials. Subsequently, the teachers were grouped into three working teams corresponding to grades K-2, 3-4, and 5-6. To facilitate the training, the Illinois State Board of Education secured the services of three consultants, teachers from other school systems who had taught Starting Early and who, therefore, knew the program's instruction materials well. The three consultants, one in each of the three working teams, reviewed the corresponding modules' objectives, materials, and strategies and answered questions about the implementation. Finally, evaluators explained the program's evaluation plan and distributed pertinent information related to the 20 schools and the evaluation itself. Teachers of the comparison classes did not attend the training sessions.

Evaluation Design

To test a central question of whether this program was effective in improving knowledge about alcohol use and traffic safety, an untreated-comparison-group design with pre- and posttest measures was used (Cook & Campbell, 1979). In this

generally interpretable design, program and comparison group pupils in grades 3 through 6 were administered an Alcohol and Traffic Safety Knowledge (ATSK) test composed of 30, 47, 66, and 90 items, respectively. Items dealt with (a) drinking patterns that are indicative of alcohol abuse and drinking patterns that are indicative of socially-acceptable drinking (patterns or situations often linked drinking and driving), (b) behavioral consequences of alcohol consumption, and (c) questions to assess knowledge of alcohol, its effects, and its relationship to driving mishaps. As reported in Donovan (1982), psychometric analysis of the tests indicated that their reliability ranged from .61 (third grade test) to .71 (sixth grade test). The reliability of the ATSK tests was calculated to be .89 for the fifth grade sample in this study. For the other test levels it was similarly high. Each test was divided into subscales (or objectives) to further specify content knowledge of alcohol and its effects on behavior.

Student and teacher questionnaires were also employed to determine participant satisfaction with the program. The student questionnaire was principally used to determine attitudes toward the program, its content, and teaching techniques. No formal testing was conducted in grades K through 2, but teachers were encouraged to do their own assessment using the tests included in the respective modules or develop their own evaluation plan. Questionnaire data, however, was collected from all teachers and from students in grades 4 through 6.

The evaluation sought to answer these questions:

1. What was the grade-by-grade impact of Starting Early on knowledge, attitudes, and behavior?
2. Were there differences in the way teachers implemented the program? If so, what were the reasons for those differences?
3. How did pupils respond to the program? Did changes in knowledge, attitudes, and behavior vary depending on sex and race?
4. What did the teachers and children think about their participation as well as the content and strategies recommended for this program?

Data Sources

Approximately 879 students were identified for the pilot evaluation of the program and subsequently completed pre- and posttests. These students ranged from grade 3 to 6 and were enrolled in 40 different classrooms which were located in 18 of the 20 participating schools. (Two of the racially identifiable schools did not report implementation and/or evaluation data.) The remaining 1,121 pupils were either K-2 pupils or pupils in grades 3-6 whose pre- and posttest scores could not be matched. Pupils in K-2 did not participate in the testing done to determine the effectiveness of the program.

In each school with a grade 3-6 program-classroom and a student population of 550 pupils or more, a comparison classroom of students was obtained. Although students or classrooms were not randomly assigned to the program, comparison classrooms were matched on grade and academic ability as much as possible. Two hundred forty (240) students enrolled in 14 different classrooms were identified for this group.

Results of the evaluation

In an attempt to answer the question -- what was the grade-by-grade efficacy of Starting Early? -- analyses of covariance were performed on the scores obtained by both program and comparison pupils before and after the implementation of the program. In addition, descriptive data were obtained from teacher and student questionnaires.

Test Battery Results

Table 1 presents mean ATSK-test scores by group and grade. With regard to within group gains, the program pupils surpassed their comparison counterparts at all grades, especially in fifth grade (5.0 to -0.1 points). There were very small differences in sixth grade (0.5 to 0.4 points). The largest between group differences occurred in grades 3 and 5. Program pupils in third and fourth grades posted between group differences of 2.8 and 1.7 points over comparison groups. The between groups difference in the fourth grade, however, was inflated by an unexpected loss in the comparison group. Within group gains were assessed through paired t-tests. For the program pupils there were significant differences in grades 3 ($p < .001$), 4 ($p < .05$), and 5 ($p < .001$). There were no significant-gain scores for comparison groups.

Insert Table 1 about here.

Classroom results indicated that 29 of the 40 program rooms showed pre-to-posttest gains. The mean classroom gains ranged

from 0.2 to 11.1, the average gain was 2.4. Of the remaining 11 program rooms, two showed no change and nine showed an average loss of 1.8, the range of the loss in these nine rooms went from 0.3 to 5.7 points. With the exception of four comparison rooms that showed a mean average pre- to posttest loss of 3.3, the 14 comparison classrooms had mean gains or losses that remained within the range comprised between plus one and minus one. The 3.3 mean loss recorded by four comparison classrooms is difficult to explain, but could be due to unexplained testing circumstances or to student lack of interest.

Table 2 presents the mean pre- and posttest scores by group and grade after controlling for differences in sex, race, and ITBS achievement. The adjusted program effects illustrated in the table confirmed that the grade-by-grade program effect on pupils in grades 3, 4, and 5 was statistically significant. The level of statistical significance ranged from $p < .001$ for grade 3 to $p < .05$ for grade 5. There was no observed program effect in grade 6.

Insert Table 2 about here.

Differences in ATSK-test performance were also investigated by sex and race. With respect to sex, significant differences in favor of females were found in the fourth grade only ($p < .01$). The comparison of the scores of the three participating racial groups did not yield significant differences at any grade level. However, it was found that, in general, Hispanic pupils who, because of language and cultural differences, were presumed to

encounter more difficulties, performed as well as blacks or whites.

Program and comparison pupils were contrasted across objectives (subtests) to determine the grade-by-grade program effects on pupils' change relative to specific objectives. An indication of this change is provided by the differences in the adjusted means of the two groups in the various subtests. As illustrated in Table 3, change in the understanding of the relationship between alcohol and risk taking was statistically significant ($p < .001$) in third grade. The change in fifth graders' knowledge of the reasons why alcohol affects individuals differently was equally significant. Third graders' understanding of the relationships between alcohol and traffic safety and alcohol and motor coordination also changed significantly ($p < .01$). Likewise, pupils in the fourth grade changed their understanding of the linkage between adult-role models and drinking behavior at the .01 level of significance. Finally, the understanding of the risks and rewards people experience when drinking also changed significantly ($p < .05$) in the fifth grade. Such changes were impressive among pupils in the third, fourth, and fifth grade, but negligible among pupils in the sixth grade.

Insert Table 3 about here.

Teachers' Evaluation

The teachers' motivation, commitment, and sense of ownership are indicators of program effectiveness. To determine the teachers' attitudes and opinions concerning Starting Early, a

teacher questionnaire was distributed at the completion of the program. Fifty teachers responded giving a measure of their commitment to and involvement in this program.

The teachers reported that they had followed the teaching techniques recommended for Starting Early completely (33% of the teachers), most of the time (56%), and some of the time (11%). When responses to this item were analyzed by grade level, the lower the grade, the more teachers indicated that they had followed closely the teaching techniques recommended for the program. In fact, among those who marked completely there was only one fifth grade teacher and none from the sixth grade. In contrast, all of those who marked some of the time were fifth and sixth grade teachers.

Teachers responded to a Likert-type scale ranging from not helpful (1) to very helpful (5) to rate the extent to which factors facilitated the implementation of Starting Early. On the average, teachers' ratings of the materials and ideas contained in this curriculum was 4.3, while their ratings of the assistance and training they received was 4.1. Another factor, the support given by administrators in the local school, received an average rating of 4.0.

As for the things that hindered the implementation, one teacher wrote, "I believe this program could have been more successful if begun earlier. Coming so late in the school year, I was unable to do some follow-up activities. We would have discussed more about healthy foods if we had had the time." In fact, at least 40 percent of the teachers felt that the late start of the program was a hindrance to the implementation.

Approximately 38 percent also thought that the vocabulary of the ATSK tests was too difficult and the wording of statements too confusing for their students.

On a Likert-type scale ranging from very bored (1) to very interested (5), the average teacher rating of the students' reactions to Starting Early was 4.5, thus signifying a very positive response. "My class and I enjoyed the Starting Early program," wrote a teacher about the response of her third graders whose scores registered a 2.3 mean gain and added, "The children eagerly participated and looked forward to each new lesson. I feel the materials presented the alcohol problem in a way that was easily understood by the children." This statement typified the opinions of those teachers who approached this program with enthusiasm and whose pupils had responded positively. They appeared to be committed to the goals of the program and, when some aspect of its implementation did not work out as planned, they innovated and challenged the class with compatible strategies. Thus, for instance, a sixth grader reported, "My favorite thing about Starting Early was when we didn't get the movie. Instead, we did our own play."

Teachers who experienced difficulties, however, reacted in ways implied in a comment made by a teacher whose sixth graders registered a pre-to-posttest mean loss of 5.7: "The students and I lost interest in the program when the films arrived five weeks late. The films were not the correct ones when they arrived. We were very disappointed." Nine teachers appear to have had difficulties such as those described in this representative comment. The commitment of this group seems to have been partial

so that, when difficulties emerged, the teacher lacked the motivation to innovate or to substitute one feature of alcohol education and traffic safety for another as the circumstances required. This apparent motivational deficiency may have been due in part to the late start of the program and to the proverbial fear of the unknown; the content of the program was thoroughly new to many teachers as the results of the survey given at the inservice meetings show. The nine teachers with apparent motivational deficiencies implemented the program without conviction, an occurrence that contrasted sharply with the rest of the teachers.

Overall, the teachers believed that Starting Early would probably (57% of the teachers) or definitely (41%) be an influence on the behavior of their pupils, thus signifying an impact on children's behavior. On a Likert-type scale ranging from negative (1) to positive (5), the average teacher ratings for the overall value of this program and for its suitability for their pupils were 4.5 and 4.4, respectively. Finally, teachers believed that Starting Early can best be incorporated in the health/science curriculum (72% of the teachers) and in social studies (28%).

Pupils' Evaluation

The pupils' opinions, motivation, and commitment provide other indicators of program effectiveness. Hence, a student questionnaire was designed to determine attitudes toward the program, its content, and teaching techniques. The evaluators

decided to canvass the opinions of 4-6 graders enrolled in the program classrooms.

Regardless of their grade and the module they had studied, pupils were to use a Likert-type scale ranging from strongly disagree (1) to strongly agree (5) to rate their level of agreement with five basic statements concerning their reactions toward this program. These statements are listed in Table 4 which illustrates the responses of fourth, fifth, and sixth graders. The pupils' mean ratings and the total number of pupils who rated the items are illustrated in the table. The pupils' level of agreement was highest for the statements, "I learned things that will do me some good" and "I learned about alcohol and traffic safety" (the overall rating for these statements was 4.3). With an overall rating of 3.4, the statement, "I did more in class than I usually do," elicited the lowest level of agreement. The general trend appeared to indicate that the younger pupils responded slightly more positively to the program than the others.

Insert Table 4 about here.

Pupils were also asked to rate the main activities around which the implementation of Starting Early revolved. For this purpose they were to use a scale that ranged from poor (1) to excellent (5). If the activity was not carried out in their classroom, they were asked to so indicate. On the average, slightly over 54 percent of fourth graders (N=198) reported that three activities (Almost everyone does: Ways to feel good without

using drugs, Poetry building, and Writing slogans) had not been implemented in their classrooms. Other fourth-grade activities and the average student ratings were as follows: Batter-up/alcoball (4.5), Making a lap book (4.3), Playing charades: Mimicking adult behavior and Values voting: Voting on decisions about drinking (4.1), and Filmstrip: Free to be (3.9).

An average of 41 percent of fifth graders (N=206) indicated that four activities (Alcohol: How much is too much, Risks ratio, Joey and me, and Let's have a party) had not been implemented in their classrooms. Other fifth-grade activities and the average student ratings were as follows: Rights and responsibilities: Buttons (4.3), Playing jeopardy (4.2), Role playing (3.9), Jungle jamboree (3.6), and Black magic (3.4).

An average of 37 percent of sixth graders (N=246), whose Starting Early module included eleven activities, indicated that five of the activities (i.e., Playing alcohol pyramid, Playing charades, Loneliness walk, All bottled up, and Role playing) had not been implemented in their classrooms. Other sixth-grade activities and the average-student ratings were: Thinking about drinking (3.9), Trigger films and Dear Abby alcohol (3.8), and Breaking habits and Mini-lectures (3.7).

Students also completed sentences about why they liked Starting Early, what was their favorite thing about the program, why it was important to learn about alcohol and traffic safety, and the three most important things they had learned. Students liked this program for many reasons including: it helped them make better choices, it encouraged them not to drink, it made them realize that drinking will not solve their problems, it made

them think, and they found it to be informal and lots of fun. The favorite things for them included: the films, answering questions related to the films, the discussions, thinking about the effects of alcohol, talking about the films, and role playing. They thought learning about alcohol was important because: it affects a lot of lives, too many people drink and drive, it is harmful, it causes accidents, it can ruin a person's life and destroy a family, and "Because you want to know what is out there in the world." Pupils also reported that the most important things they had learned in this program included: what alcohol does and what it makes people do, reasons why people drink and that "alcohol is not all fun and games", not to drink oneself and help others not to drink, and that a person does not need to drink to be cool.

Implications

A number of inferences for educational practice can be drawn from the results of this evaluation. First, results indicated the beneficial effects of the program on knowledge of alcohol, its effects, and on traffic and pedestrian safety: "All in all," related a teacher, "I believe this is a good program that can inform and educate our students." Because alcohol use and drug abuse are serious social problems (Botvin, 1986), educational programs such as this one are crucial in presenting factual information and promoting resistance skills: "This program was important to me," reported a sixth grader, "because now I know what to do and say when someone offers me a beer."

Second, youths need to draw on informal sources of support to manage personal, family, and school stress and, in the process, internalize coherent sets of values and expectations (Werner & Smith, 1982). Particularly urban, minority children, who frequently feel out-of-step with the demands of society and school need a store of positive early experiences they can draw on to cope with life problems without turning to alcohol and substance abuse: "I liked this alcohol program," wrote a sixth grader, "because it helped some of my friends deal with their problems." Starting Early appears to have built sources of support that contributed to make the lives of pupils seem more coherent and manageable: "I think this program is important," indicated a youngster, "because it helps in a lot of ways to know how alcohol affects people." "I liked this program," wrote another child, "because it taught me about alcohol and showed me how lucky I am not to have any alcoholics in my family."

Third, the program had a symbolic value for the children and their teachers who saw it as an affirmation of an urgent need and as a willingness on the part of the school system to do something about it: "I think this program is necessary." Reported a teacher who added, "The students seemed to look forward to our weekly lessons and loved the way in which they were presented." Other teachers referred to the involvement and interest of their pupils as an indicator of the need for a program such as Starting Early in Chicago public schools. A second grade teacher related that the "children responded quickly with experiences related to drugs and alcohol. During the implementation, they watched

Cracked up on TV and understood what they saw. The discussions were exciting and could have gone on and on."

Finally, it appears to have helped those involved understand that complex factors that are not amenable to simple solutions are often at the heart of substance abuse. Awareness of this corollary of the program could be inferred from the children's comments: "Starting Early taught me not to ever try drugs or drink alcohol no matter what because drinking or drugs gets you in a worse situation." Another child related that "Starting Early helped me realize that drinking will not help my problems."

The evaluation documented the beneficial effects of this program on knowledge about alcohol effects on the body and mind, and about its relationship to traffic and pedestrian safety. Children gained factual information, were guided in the exploration of their feelings toward alcohol-related concerns, and received practice in planning and acting out the ways in which they can cope with or avoid alcohol-related situations. The evaluation also showed that participants displayed high levels of motivation, commitment, and sense of responsibility toward the tenets and aims of this program.

References

- Botvin, G. (1986). Substance abuse prevention research: Recent developments and future directions. Journal of School Health, 56(9), 369-374.
- Cook, T.D. & Campbell, D.T. (1979). Quasi-experimentation: Design and analysis issues for field settings. Boston: Houghton Mifflin Company.
- Donovan, C.L., Hagen, E.P., Homer, M., Kennel, M., & Malfetti, J. (1982). Development of an alcohol and traffic safety module for elementary school, kindergarten through sixth grade. New York: Teachers College, Columbia University.
- Dawkins, M.P. (1986). Social correlates of alcohol and other drug use among youthful blacks in an urban setting. Journal of Alcohol and Drug Education, 32(1), 15-28.
- Johnston, L.D., Bachman, G.G., & O'Malley, P.M. (1979). Drugs and the class of '78: behaviors, attitudes and recent national trends. Rockville, Maryland: National Institute of Drug Abuse.
- Johnston, L., O'Malley, P., & Bachman, J. (1985). Use of licit and illicit drugs by America's High School Students, 1975-1984 (Publication No. (ADM) 85-1394). Washington, DC: U.S. Government Printing Office.
- Mayo, B. (1987). A middle level substance abuse education program. NASSP Bulletin, 71(495), 106-109.
- Orlandi, M.A. (1986). Community-based health promotion: A multicultural perspective. Journal of School Health, 56 (9), 394-401.
- Wechsler, H., Rohman, M., Kotch, J.B., & Idelson, R.K. (1984). Alcohol and other Drug use and automobile safety: A survey of Boston-area teenagers. Journal of School Health, 54 (5), 201-203.
- Werner, E. & Smith, R. (1982). Vulnerable but Invincible: A Longitudinal Study of Resilient Children and Youth. New York: McGraw-Hill.

Table 1

Mean Pretest, Posttest, and Gain Scores by Group and Grade^a

Grade	Group	N	Pre- test mean	Post- test mean	Within Group Gains	Between Group Differences
3	Program	231	18.4	20.6	2.2***	2.8
	Comparison	83	19.3	18.7	-0.6	
4	Program	243	29.5	30.5	1.0*	1.7
	Comparison	31	27.3	26.6	-0.7	
5	Program	176	34.9	39.9	5.0***	5.1
	Comparison	64	34.1	34.0	-0.1	
6	Program	229	48.6	49.1	0.5	0.1
	Comparison	62	50.1	50.5	0.4	

* $p < .05$
 *** $p < .001$

^aMeans include children with valid values for race, sex, pretest, posttest, and ITBS achievement.

Table 2

Mean Scores and Adjusted Program Effects by Group and Grade

Grade	Group	Pretest		Posttest		Program Effects ^a	F
		M	SD	M	SD		
3	Program	18.4	3.5	20.6	4.1	2.5	27.3***
	Comparison	19.3	4.7	18.7	4.9		
4	Program	29.5	5.1	30.5	6.1	2.6	6.1**
	Comparison	27.3	5.4	26.6	5.6		
5	Program	34.9	6.3	39.9	11.7	3.2	5.3*
	Comparison	34.1	6.0	34.0	7.1		
6	Program	48.6	7.9	49.1	12.0	-0.3	0.5
	Comparison	50.1	6.7	50.5	7.5		

* $p < .05$ ** $p < .01$ *** $p < .001$ ^aAdjusted for pretest, sex, race, and ITBS reading achievement.

Table 3

Adjusted Effects by Starting Early Objectives

Grade	Focus of Objectives	Adjusted Effects ^a	Number of ATSK test Items
3	Alcohol and risk taking	0.9***	10
	Alcohol and traffic safety	0.7**	10
	Alcohol and motor coordination	0.6**	10
4	Peers and drinking behavior	0.6	18
	Adult role models and drinking	1.1**	10
	Ways of achieving satisfaction without drinking	0.5	9
	Actions showing Respect for a person's decision not to drink	0.6	10
5	Reaction of body & mind to the combination of alcohol & drugs	0.4	9
	Influence of alcohol on different persons under various conditions	2.4***	28
	Risks & rewards people experience when they drink	1.3*	29
6	Signs of alcohol abuse	0.3	12
	Alcohol and one's ability to act responsibly	-0.2	11
	Alcohol as a treatable condition	0.1	12
	Resources available to deal with drinking problems	0.6	19
	Effects of drinking on driving and pedestrian skills	-0.5	15
	Reasons why young people have special drinking and driving problems	-0.7	14
	Hazardous drinking and driving situations and what to do	-0.7*	6

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$ ^aControlling for pretest differences.

Table 4

Pupils' Mean Ratings of Starting Early by Level*

Statement:	Grade 4		Grade 5		Grade 6	
	N	Rating	N	Rating	N	Rating
I enjoyed being in class and had fun learning.	198	4.4	205	4.0	244	4.1
I did more in class than I usually do.	198	3.7	205	3.1	242	3.4
I learned about alcohol and traffic safety.	198	4.4	204	4.1	244	4.4
I liked the games we played.	196	4.4	205	3.9	221	3.5
I learned things that will do me some good.	196	4.4	205	4.2	243	4.3

*The Likert-type scale ranged from strongly disagree (1) to strongly agree (5).